REMARKS/ARGUMENTS

Favorable reconsideration of this application, in light of the following discussion is respectfully requested.

Claims 1-18 are pending in this application. Claim 1 is herein amended. Support for the amendment of claim 1 is found at least in original claim 4.

In the outstanding Office Action, claims 1-18 were rejected under 35 U.S.C. § 102(e) as anticipated by Takenaka, U.S. Patent No. 6,243,623. Applicants respectfully traverse this rejection, as the Office has failed to state a prima facie case of obviousness.

Claim 1 is directed to a walking control method for a legged robot. In the claimed method, walking is controlled using a foot-sole coordinate system based on sole positions. The foot-sole coordinate system is based on a first coordinate axis connecting soles of the legs, a second coordinate axis perpendicular to the first coordinate axis in a horizontal plane, and a coordinate axis extending in the vertical direction. Claims 2 and 3 depend from claim 1.

Claim 4 is directed to a walking control apparatus for a legged robot with a main body and legs. The claimed apparatus has a control device using a foot-sole coordinate system based positions of the soles. The foot-sole coordinate system has a first coordinate axis in a direction connecting the soles of the legs, a second coordinate axis perpendicular to the first coordinate axis in a horizontal plane, and a coordinate axis extending in the vertical direction as a control coordinate system for the walking control. Claims 5-18 depend from claim 4.

Takenaka teaches a control system for a legged robot. The Takenaka system includes a coordinate system based on Cartesian control coordinates. In such a system, the controls are based on the moving direction of the legged robot. The Takenaka control system is based

on the initial forward movement of the leg, and upon the measurement of the 1st foot floor reaction force in the moving direction.[1]

The present system and method differ from the Takenaka system. As illustrated in Figs. 2-5, the present invention is based on a coordinate system in which the basis is the first coordinate axis connecting the soles of the legs. The coordinate system is not based upon the moving direction of the robot, but is based upon the foot-sole coordinate system, in which movement is based on the positions of the soles and the state of the ground contacting legs. The Takenaka system does not teach or suggest a first coordinate axis in a direction connecting the soles of the legs, a second coordinate axis perpendicular to the first coordinate axis in a horizontal plane, and a coordinate axis extending in the vertical direction.

In order to anticipate, a single reference must disclose each and every element of the claimed invention. Further, the reference must enable making and using the claimed invention without undue experimentation. Failing to teach a foot-sole coordinate system, with a first coordinate axis in a direction connecting the soles of the legs, Takenaka does not disclose and enable the claimed invention. Accordingly, Applicants respectfully request withdrawal of this rejection and allowance of claims 1-18.

[1] *See* Takenaka, Figs. 40-43.

Consequently, in view of the foregoing discussion, it is respectfully submitted that the application is in condition for allowance. An early and favorable action is therefore requested.

Respectfully submitted,

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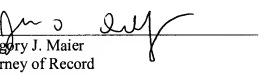

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